

## 32–100 Removal and installation of front shock absorber

### Data

#### Upper shock absorber suspension

	Part no.	Height	Length	OD	Rubber hardness ° Shore
Rubber rings top and bottom	180 326 01 68	19	—	40	57 ± 5
Protective tube <sup>1)</sup>	115 323 04 38	4	240	—	—
Plastic protective sleeve <sup>1)</sup>	126 323 00 38	4	199	—	—
Lower disc <sup>1)</sup>	123 323 02 67	3,5	—	44	—
Supplementary rubber spring <sup>1)</sup>	123 323 05 44	—	84	—	—
Shim <sup>2)</sup>	123 323 01 84	9	—	40	—

<sup>1)</sup> Only for gas pressure shock absorbers with separating piston.

<sup>2)</sup> For sedans and T-sedans with harder suspension for countries with poor road conditions, sedans long, T-sedans with higher additional load, as well as special vehicles (special body) a shim 9 mm high is mounted between rubber-supplementary spring and lower disc.

#### Tightening torques

Nm

Double hex bolts of lower  
shock absorber suspension

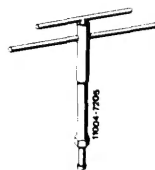
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Hex nuts of upper shock absorber suspension

tighten up to end  
of threads

#### Special tool

Socket wrench 5 mm for fastening  
upper shock absorber



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## Note

The front shock absorbers also serve as a deflection stop for the front wheels. For this reason, detach shock absorber suspension only, when the vehicle is resting on its wheels or when the control arm is supported. With the shock absorber released, the upper control arm rests on end stop at front end. For assembly of upper suspension, either place vehicle on its wheels or lift axle half at lower control arm.

Always replace self-locking screws!

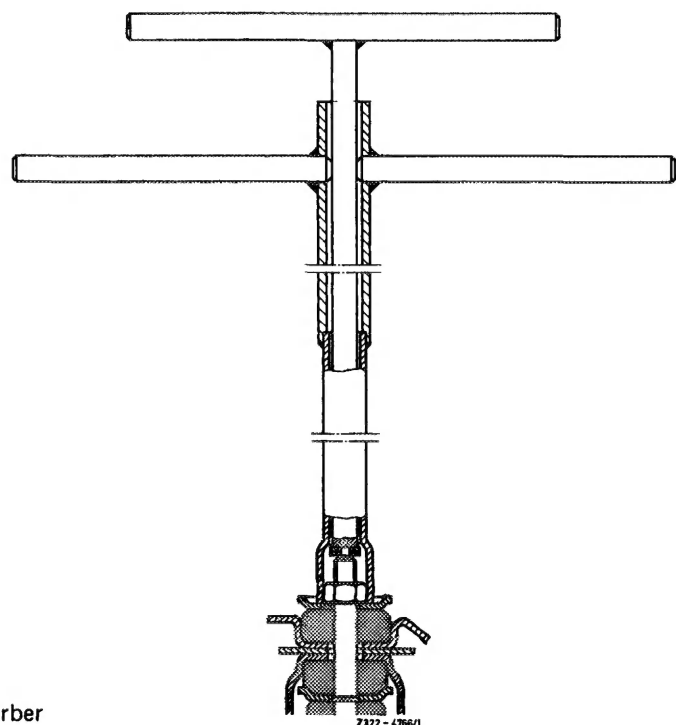
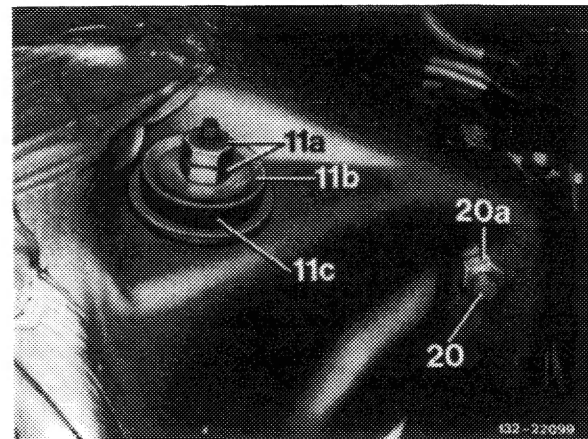
In the event of repairs and independent of make, the shock absorbers can be **individually** exchanged. Only shock absorber versions identified by color code, e.g. 1 lengthwise line white or 1 crosswise line white, must be in agreement.

## Removal

1 Loosen hex nuts (11a) at upper shock absorber suspension. Unscrew lower hex nut with wrench for fastening shock absorber. Remove disc (11b) and rubber ring (11c).

### Attention!

When removing gas pressure shock absorbers with separating piston or piston rod located on top of jacked up vehicle with axle half relieved, make sure that the piston rod is not rotating along while loosening upper suspension. Since in this condition the deflection stop in shock absorber rests against operating piston, the fastening of operating piston to piston rod may become loose. The gas pressure would then result in a sudden extension of piston rod and the oil in shock absorber would flow out (danger).

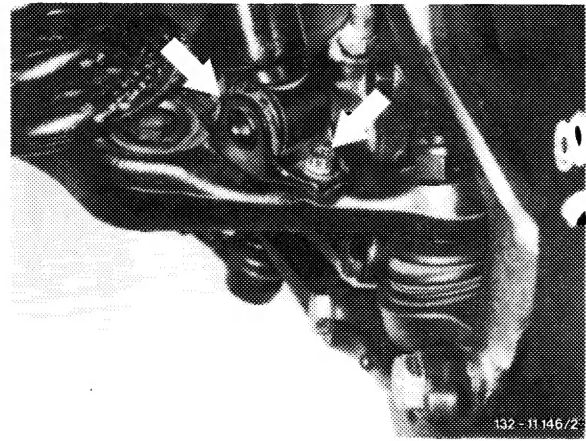


Wrench for fastening shock absorber

2 Jack-up vehicle.

3 Press-in shock absorber piston rod and set shock absorber upright in relation to lower control arm.

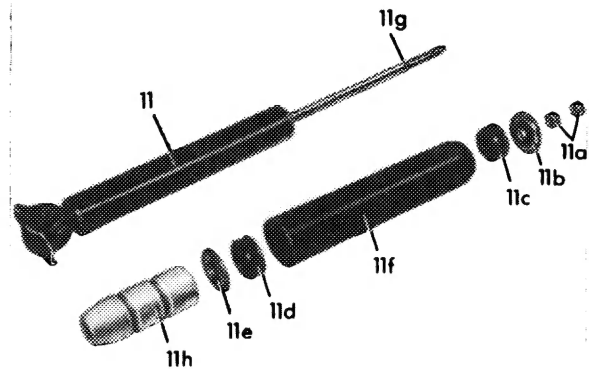
4 Loosen lower shock absorber suspension, while unscrewing double hex screws on lower control arm. Remove shock absorber.



## 5 Remove suspension parts:

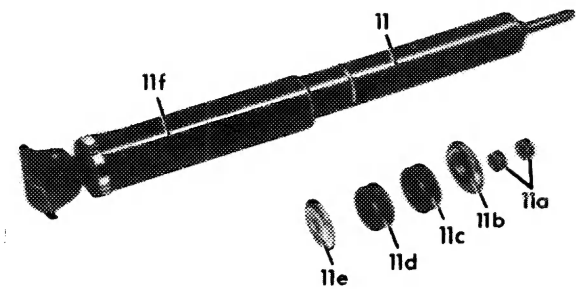
a) Shock absorber with separating piston: Pull off protective tube (11f), remove lower rubber ring (11d), lower disc (11e) and supplementary rubber spring (buffer stop) (11h).

Shock absorber with separating piston  
Bilstein  
Boge  
F & S



b) With shock absorber without separating piston: remove lower rubber ring (11d) and lower disc (11e).

Shock absorber without separating piston  
F & S

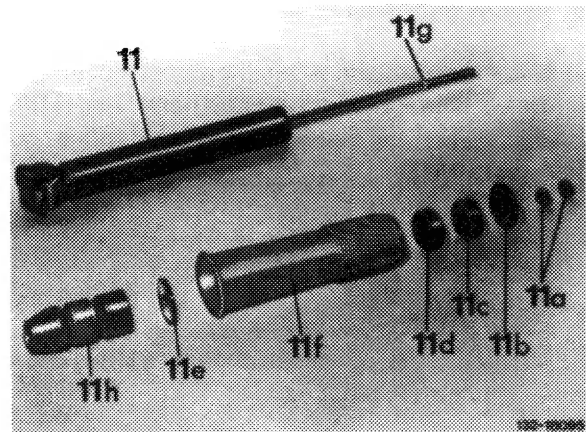


**Note:** The supplementary rubber springs (buffer stop, 11h) are located inside protective tube on piston rod.

On shock absorbers with separating piston they are located in-between housing and upper suspension.  
On shock absorbers without separating piston between housing and lower suspension.

On shock absorbers with separating piston entering production starting November 1980 and depending on vehicle model, the protective sleeves made of rubber are replaced by plastic protective sleeves. The supplementary rubber springs (buffer stop, 11h) are located inside plastic protective sleeve on piston rod.

- 11 Shock absorber
- 11a Hex. nut
- 11b Upper disc
- 11c Upper rubber ring
- 11d Lower rubber ring
- 11e Lower disc
- 11f Plastic protective sleeve
- 11g Locking ring
- 11h Supplementary rubber spring (Buffer stop)



## Installation

**Note:** Entering production starting November 1980, the following vehicles are provided with plastic protective sleeve (11f) on shock absorbers with separating piston:

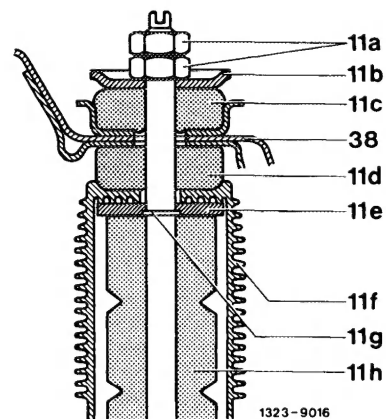
Sedans and coupes with harder suspension for countries with poor road conditions,

sedans, long,

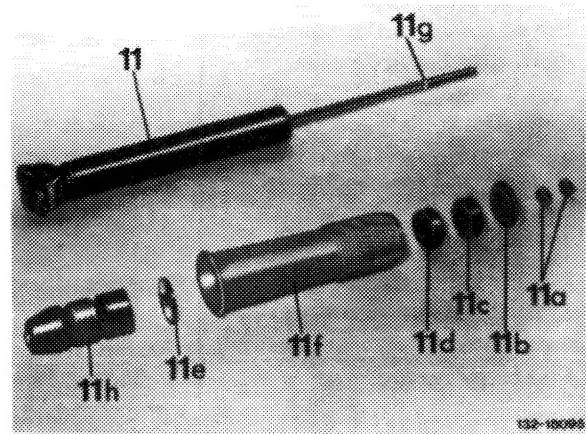
T-sedans with: normal suspension, higher additional load, harder suspension for vehicles with poor road conditions,

special vehicles with special body.

During assembly, make sure that the plastic protective sleeve (11f) is mounted between lower disc (11e) and lower rubber ring (11d).

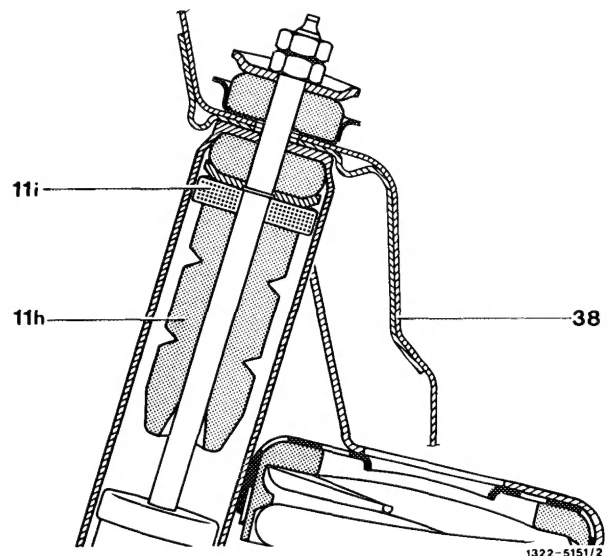


- 11 Shock absorber
- 11a Hex. nuts
- 11b Upper disc
- 11c Upper rubber ring
- 11d Lower rubber ring
- 11e Lower disc
- 11f Plastic protective sleeve
- 11g Locking ring
- 11h Supplementary rubber spring
- 38 Front end



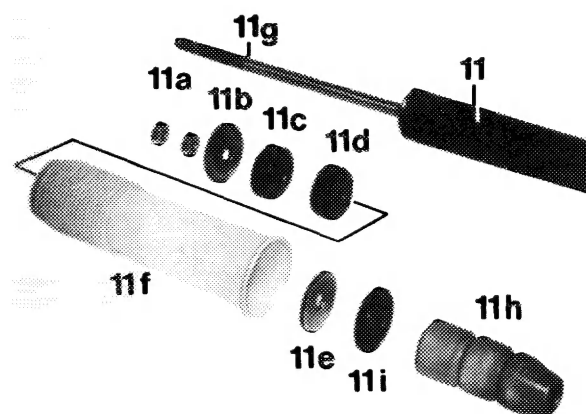
### Deflection stop — front axle

On vehicles with higher vehicle level (vehicles with 15" wheels, as well as with harder suspension for countries with poor road conditions) a shim 9 mm thick is installed on shock absorbers with separating piston between supplementary rubber spring (rubber buffer) and lower disc.



### Layout deflection stop

- 11h Supplementary rubber spring (rubber buffer)
- 11i Shim
- 38 Front end



- 11 Shock absorber
- 11a Hex. nuts
- 11b Upper disc
- 11c Upper rubber ring
- 11d Lower rubber ring
- 11e Lower disc
- 11f Plastic protective sleeve
- 11g Locking ring
- 11h Supplementary rubber spring (buffer stop)
- 11i Shim

6 Check suspension components, clean lower control arm on contact surface of fastening bracket for lower shock absorber suspension.

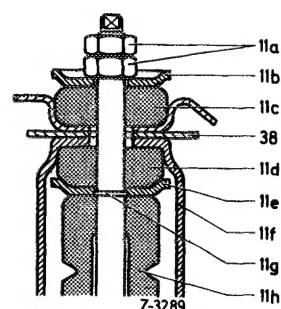
**Note:** The holding bracket of the lower shock absorber suspension should be tightly seated in rubber mount, the rubber mount should not rotate in suspension eye.

7 Slip suspension components (on shock absorbers with separating piston: 11h, 11e, 11d and 11f; on shock absorber without separating piston 11d and 11e) on piston rod.

### Attention!

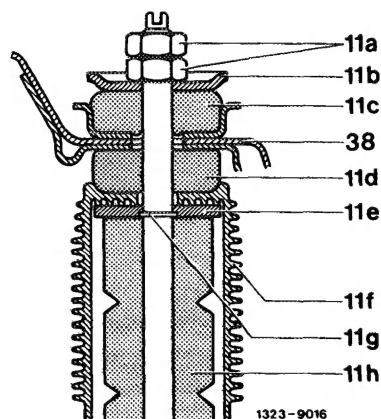
On shock absorbers with separating piston never confuse lower disc (11e) with upper disc (11b), since otherwise the disc may slip over locking ring (11g) while driving.

1st version  
Upper suspension



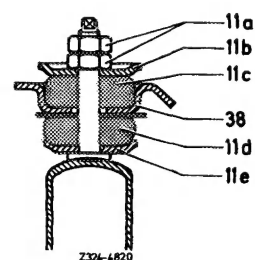
2nd version  
Upper suspension

- 11a Hex. nut
- 11b Upper disc
- 11c Upper rubber ring
- 11d Lower rubber ring
- 11f Protective tube or plastic protective sleeve
- 11g Locking ring
- 11h Supplementary rubber spring (buffer stop)
- 38 Front end



Upper suspension  
Shock absorber without separating piston

- 11a Hex. nuts
- 11b Upper disc
- 11c Upper rubber ring
- 11d Lower rubber ring
- 11e Lower disc
- 38 Dome on frame floor

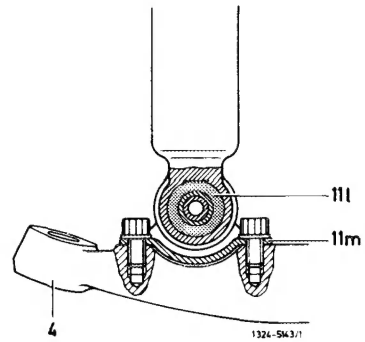


8 Fasten shock absorber to lower control arm and introduce into front end.

9 Lower vehicle and mount upper shock absorber suspension.

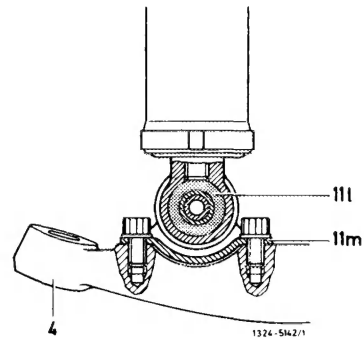
Lower suspension  
Shock absorber with separating piston

4 Lower control arm  
11l Rubber mount  
11m Fastening bracket



Lower suspension  
Shock absorber without separating piston

4 Lower control arm  
11l Rubber mount  
11m Fastening bracket



**Attention!**

Pay attention to Notes for scrapping gas-filled parts (refer to 32—120).